

R09

Code No: 58089

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, June - 2018

AVIONICS AND INSTRUMENTS

(Aeronautical Engineering)

Time: 3 Hours

Max. Marks: 75

**Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) Explain the architecture and protocols of MIL-STD-1553 data bus.
- b) Compare the memory mapped I/O and peripheral mapped I/O in Microprocessor. [7+8]
- 2.a) What are the external world sensors in Avionics? Explain in detail
- b) What are director display and EL display? Explain with merits and demerits. [7+8]
- 3.a) What is the function of ATC transponder? Explain the principle of transponder operation with the help of a diagram.
- b) Explain system wise radio frequency utilization in any aircraft. [8+7]
- 4.a) What is Dead Reckoning Navigation system? Explain any one system in detail.
- b) Differentiate between wide area augmentation and local area augmentation system. [7+8]
- 5.a) What is FBW explain its salient features with the help of block diagram in comparison with the conventional flight control system.
- b) Write salient features of Flight Data Recorders and auto pilot flight director system. Explain its significance in Aircraft controlling. [8+7]
6. Explain the objectives of Air Traffic Management. What are the future improvements in Air Traffic Management? [15]
- 7.a) Why Electronic Warfare is needed in Military aircraft applications? Explain in detail the EW spectrum.
- b) Explain the salient features and operating procedures of Surveillance radar element. [8+7]
8. Explain airborne radar. Show the operational functions of Antenna and Transmitter in civil aviation applications with neat sketches. [15]

---ooOoo---